APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,958	06/14/2001	Kazuo Sano	4468-016	4198

7590 11/10/2003	EXAMINER
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ART UNIT	PAPER NUMBER
2672	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/879,958	SANO ET AL.
	Examiner	**Art Unit**
	Javid A Amini	2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *August 28, 2003* .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-21* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____ .

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

Response to Arguments

Applicant's arguments filed August 28, 2003 have been fully considered but they are not persuasive.

> Response to remarks on page 7, lines 11-25: Applicant discloses that the explanation for color chip and color specification values is described on page 7, lines 20 and on page 10 lines 2. {Explanation from specification on page 7, line 20: Next, a CCM calculating process performed by executing a CCM calculating program, according to one embodiment of the invention, will be described referring to FIG. 3}. And also {Explanation from specification on page 10, line 2: (input in advance) corresponding to the adjacent Munsell color chips}. The explanations do not provide explicit information to be able to examine the claim language.

> Response to remarks on page 8, lines 5-6: Applicant argues that Rolleston does not teach CCM (computer color matching) calculating system. Examiner's reply: Rolleston in col. 4, lines 39-45 teach, the scanning operation is a set of scanner image signals Rs, Gs, Bs, defined in device dependent scanner terms. Incorporated into the scanner or another processing path is a post-scanning processor 14, which provides correction of scanner image signals Rs, Gs, B to colorimetric terms, Rc, Gc, Bc, typically digital in nature. The title of the prior art (Rolleston et al.) is "color printer calibration with blended look up tables", Interpretation: the color printer is considered as a CCM, because it contains a processor (called a computer), and calibrating (matching) colors.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4,6-7, 9-18, and 20-21 rejected under 35 U.S.C. 103(a) as being unpatentable

over Rolleston, and further in view of Syeda-Mahmood.

1.   Claim 1.

"A CCM calculating system for calculating a blending ratio of colorants based on stored color

data, said system comprising: a data receiving means for receiving input data of differences

between color specification values corresponding to a color chip and color specification values

corresponding to a desired target color; and a calculating means for calculating a blending ratio

of colorants for reproducing said target color based on said stored color data and said data of

differences of said color specification values." Rolleston teaches in col. 3, lines 5-24, that this

method of interpolation is known as Shepard's Method (see, for example "Shepard's Method of

`Metric Interpolation` to Bivariate and Multivariate Interpolation" by W. Gordon and J. Wixom,

Mathematics of Computation, Vol. 32, No. 141, January 1978, pp. 253-264). Shepard's Method

suggests that a vector can be thought of as defining the difference between an asked-for color

which was directed to a printer in the printed color. Rolleston teaches in (col. 4, lines 8-21), the

second look up table may differ from the first look up table due to the creation method although

using the same set of color samples, or the second look up table may differ from the first look up

table due to using a different set of color samples. Rolleston teaches in (col. 1, lines 5-10) the

invention is directed towards compiling look up tables representative of printer characteristics, to

enable the conversion of colors defined in a first color space to colors defined in a printer color

space, and more particularly to a method of blending or combining the characteristics

represented by such tables. But Rolleston does not explicitly specify stored data, however, Syeda

teaches in (col. 9, lines 50-55) by well-known look-up methods, the database receiving a

semantic user query (input data) for images having sky, grass, skin, etc. (color specification

values) will use the color region index to locate and retrieve (stored data) relevant images and

regions that possess (calculate a colorant) the query surface. An appropriate GUI is then used to

display the retrieved images for the user (target color). Thus, it would have been obvious to one

of ordinary skill in the art at the time the invention was made to incorporate the teaching of

Syeda into Rolleston in order to improve color stability that involve mapping RGB color space

into a more stable representation, the invention uses an optimal color space and creates a color

code book, which provides a simple and compact representation of color surfaces present in a

collection of images.

2.   Claim 2.

"The CCM calculating system as claimed in claim 1 comprising a server storing said color data,

wherein said calculating means calculates said blending ratio using said server", Rolleston

teaches in (cols. 3; 4, lines 58-67; 1-8) color printer responsive to printer signals to deposit

printer colorants on a medium in accordance with printer signals received, is calibrated by

operating the color printer with printer signals selected to cause the printer to print color samples

on the medium; measuring the color samples to determine a first colorimetric response of the

printer to the printer signals using the first measured colorimetric response to generate a first

mapping of colorimetric values to printer signals; using the first measured colorimetric response

or a subsequent measured colorimetric response to generate at least one additional mapping of

colorimetric values to printer signals; storing the first and additional mappings in a color

conversion memory producing printer signals as a function of the first and additional mappings

stored in the color conversion memory to convert color definitions from a first color space to the

printer signals suitable for producing a corresponding response at the color.

3.   Claim 3.

"The CCM calculating system as claimed in claim 1, further comprising a color specification

value displaying means for displaying color specification values included in said input data of

color specification values", Rolleston teaches in (cols. 3; 4, lines 58-67; 1-8) color printer

responsive to printer signals to deposit printer colorants on a medium in accordance with printer

signals received, is calibrated by operating the color printer with printer signals selected to cause

the printer to print color samples on the medium; measuring the color samples to determine a

first colorimetric response of the printer to the printer signals using the first measured

colorimetric response to generate a first mapping of colorimetric values to printer signals; using

the first measured colorimetric response or a subsequent measured colorimetric response to

generate at least one additional mapping of colorimetric values to printer signals; storing the first

and additional mappings in a color conversion memory producing printer signals as a function of

the first and additional mappings stored in the color conversion memory to convert color

definitions from a first color space to the printer signals suitable for producing a corresponding

response at the color.

4.   Claim 4.

"The CCM calculating system as claimed in claim 1, further comprising a correcting means for

correcting said color specification values displayed on said displaying means", Rolleston teaches

in (cols. 3; 4, lines 58-67; 1-8) color printer responsive to printer signals to deposit printer

colorants on a medium in accordance with printer signals received, is calibrated (correction) by

operating the color printer with printer signals selected to cause the printer to print color samples

on the medium; measuring the color samples to determine a first colorimetric response of the

printer to the printer signals using the first measured colorimetric response to generate a first

mapping of colorimetric values to printer signals; using the first measured colorimetric response

or a subsequent measured colorimetric response to generate at least one additional mapping of

colorimetric values to printer signals; storing the first and additional mappings in a color

conversion memory producing printer signals as a function of the first and additional mappings

stored in the color conversion memory to convert color definitions from a first color space to the

printer signals suitable for producing a corresponding response at the color.

5.   Claim 6.

"The CCM calculating system as claimed in claim 1, further comprising blending ratio

displaying means for displaying said calculated blending ratio of colorants", Rolleston teaches in

(cols. 3; 4, lines 58-67; 1-8) color printer responsive to printer signals to deposit printer colorants

on a medium in accordance with printer signals received, is calibrated by operating the color

printer with printer signals selected to cause the printer to print color samples on the medium;

measuring the color samples to determine a first colorimetric response of the printer to the

printer signals using the first measured colorimetric response to generate a first mapping of

colorimetric values to printer signals; using the first measured colorimetric response or a

subsequent measured colorimetric response to generate at least one additional mapping of

colorimetric values to printer signals; storing the first and additional mappings in a color

conversion memory producing printer signals as a function of the first and additional mappings

stored in the color conversion memory to convert color definitions from a first color space to the

printer signals suitable for producing a corresponding response at the color.

6.   Claim 7.

"The CCM calculating system as claimed in claim 6, wherein said color data includes data of

costs of colorants, said calculating means provides a plurality of said blending ratios of colorants

and calculates the total cost of each of said calculated blending ratios based on said data of costs

of colorants, and said blending ratio displaying means displays said plurality of blending ratios

arranged in the descending order or the ascending order in terms of said total cost", Rolleston

teaches in (col. 3, lines 42-46) on is required only in a portion of the overall color gamut of a

printer. Recalibration of the entire space is costly in terms of processing time. It would be

desirable to only recalibrate a portion of the color space, or alternatively, to use the best portions

of the color space mapping. But Rolleston does not explicitly specify the descending order or the

ascending order. It would have been obvious at the time the invention was made to a person of

ordinary skill in the art to employ blending ratios arranged in the descending order or the

ascending order since it has been held that omission of an element perform the same functions as

before.

7.   Claims 9 and 20.

"The CCM calculating system as claimed in claim 1, wherein said color data is provided based on data obtained by the measurement by means of a spectrophotometer", the step is obvious because a spectrophotometer is for measuring the relative intensities of light in different parts of a spectrum.

8.   Claims 10 and 21.

"The CCM calculating system as claimed in claim 1, wherein said color data is provided based on data obtained by the measurement by means of a colorimeter", the step is obvious because a colorimeter is for determining and specifying colors.

9.   Claim 11.

"A CCM calculating method for calculating a blending ratio of colorants based on stored color data, said method comprising the steps of: receiving data of differences between color specification values corresponding to a color chip and color specification values corresponding to a desired target color; and calculating a blending ratio of colorants for reproducing said target color based on said stored color data and said data of differences of said color specification values". Rolleston teaches in (col. 1, lines 5-10) the invention is directed towards compiling look up tables representative of printer characteristics, to enable the conversion of colors defined in a first color space to colors defined in a printer color space, and more particularly to a method of blending or combining the characteristics represented by such tables. But Rolleston does not explicitly specify stored data, however, Syeda teaches in (col. 9, lines 50-55) by well-known look-up methods, the database receiving a semantic user query (input data) for images having sky, grass, skin, etc. (color specification values) will use the color region index to locate and retrieve (stored data) relevant images and regions that possess (calculate a colorant) the query

surface. An appropriate GUI is then used to display the retrieved images for the user (target

color). Thus, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of Syeda into Rolleston in order to improve color

stability that involve mapping RGB color space into a more stable representation, the invention

uses an optimal color space and creates a color code book, which provides a simple and compact

representation of color surfaces present in a collection of images.

10.   Claim 12.

"A computer-readable medium having a program of instructions for execution by the computer

to perform a CCM calculation processing for providing a blending ratio of colorants based on

stored color data, said CCM calculation processing comprising the steps of: receiving data of

differences between color specification values corresponding to a color chip and color

specification values corresponding to a desired target color; and calculating a blending ratio of

colorants for reproducing said target color based on said stored color data and said data of

differences of said color specification values". Rolleston teaches in (col. 1, lines 5-10) the

invention is directed towards compiling look up tables representative of printer characteristics, to

enable the conversion of colors defined in a first color space to colors defined in a printer color

space, and more particularly to a method of blending or combining the characteristics

represented by such tables. But Rolleston does not explicitly specify stored data, however, Syeda

teaches in (col. 9, lines 50-55) by well-known look-up methods, the database receiving a

semantic user query (input data) for images having sky, grass, skin, etc. (color specification

values) will use the color region index to locate and retrieve (stored data) relevant images and

regions that possess (calculate a colorant) the query surface. An appropriate GUI is then used to

display the retrieved images for the user (target color). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Syeda into Rolleston in order to improve color stability that involve mapping RGB color space into a more stable representation, the invention uses an optimal color space and creates a color code book, which provides a simple and compact representation of color surfaces present in a collection of images.

11.   Claim 13

"wherein said blending ratio is calculated using a server storing said color data". Rolleston teaches in (cols. 3; 4, lines 58-67; 1-8) color printer responsive to printer signals to deposit printer colorants on a medium in accordance with printer signals received, is calibrated by operating the color printer with printer signals selected to cause the printer to print color samples on the medium; measuring the color samples to determine a first colorimetric response of the printer to the printer signals using the first measured colorimetric response to generate a first mapping of colorimetric values to printer signals; using the first measured colorimetric response or a subsequent measured colorimetric response to generate at least one additional mapping of colorimetric values to printer signals; storing the first and additional mappings in a color conversion memory producing printer signals as a function of the first and additional mappings stored in the color conversion memory to convert color definitions from a first color space to the printer signals suitable for producing a corresponding response at the color.

12.   Claim 14

"further comprising the step of displaying said input data using an input data displaying means". Rolleston teaches in (cols. 3; 4, lines 58-67; 1-8) color printer responsive to printer signals to

deposit printer colorants on a medium in accordance with printer signals received, is calibrated

by operating the color printer with printer signals selected to cause the printer to print color

samples on the medium; measuring the color samples to determine a first colorimetric response

of the printer to the printer signals using the first measured colorimetric response to generate a

first mapping of colorimetric values to printer signals; using the first measured colorimetric

response or a subsequent measured colorimetric response to generate at least one additional

mapping of colorimetric values to printer signals; storing the first and additional mappings in a

color conversion memory producing printer signals as a function of the first and additional

mappings stored in the color conversion memory to convert color definitions from a first color

space to the printer signals suitable for producing a corresponding response at the color.

13.   Claim 15

"further comprising the step of correcting said color specification values displayed on said input

data displaying means". Rolleston teaches in (cols. 3; 4, lines 58-67; 1-8) color printer

responsive to printer signals to deposit printer colorants on a medium in accordance with printer

signals received, is calibrated (correction) by operating the color printer with printer signals

selected to cause the printer to print color samples on the medium; measuring the color samples

to determine a first colorimetric response of the printer to the printer signals using the first

measured colorimetric response to generate a first mapping of colorimetric values to printer

signals; using the first measured colorimetric response or a subsequent measured colorimetric

response to generate at least one additional mapping of colorimetric values to printer signals;

storing the first and additional mappings in a color conversion memory producing printer signals

as a function of the first and additional mappings stored in the color conversion memory to

convert color definitions from a first color space to the printer signals suitable for producing a

corresponding response at the color.

14.   Claim 16

"wherein said color data includes data of colorants, resins or applications." Rolleston teaches in

(col. 3, lines 42-46) on is required only in a portion of the overall color gamut of a printer.

Recalibration of the entire space is costly in terms of processing time. It would be desirable to

only recalibrate a portion of the color space, or alternatively, to use the best portions of the color

space mapping. But Rolleston does not explicitly specify the descending order or the ascending

order. It would have been obvious at the time the invention was made to a person of ordinary

skill in the art to employ blending ratios arranged in the descending order or the ascending order

since it has been held that omission of an element perform the same functions as before.

15.   Claims 17 and 18

As in claim 17, "further comprising the step of displaying said calculated blending ration of

colorants in a blending ratio displaying means". And in claim 18 "wherein said color data

includes data of costs of colorants, a plurality of said blending ratios of colorants are provided

and the total cost of each of said calculated blending ratios is calculated based on said data of

cost of colorants, and said blending ratio displaying means displays said plurality of blending

ratios arranged in the descending order or the ascending order in term of said total

cost."Rolleston teaches in (cols. 3; 4, lines 58-67; 1-8) color printer responsive to printer signals

to deposit printer colorants on a medium in accordance with printer signals received, is calibrated

by operating the color printer with printer signals selected to cause the printer to print color

samples on the medium; measuring the color samples to determine a first colorimetric response

of the printer to the printer signals using the first measured colorimetric response to generate a

first mapping of colorimetric values to printer signals; using the first measured colorimetric

response or a subsequent measured colorimetric response to generate at least one additional

mapping of colorimetric values to printer signals; storing the first and additional mappings in a

color conversion memory producing printer signals as a function of the first and additional

mappings stored in the color conversion memory to convert color definitions from a first color

space to the printer signals suitable for producing a corresponding response at the color.

Claims 8 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over

Rolleston as, and further in view of Washio.

16.   Claims 8 and 19.

As in claim 8, "The CCM calculating system as claimed in claim 1, wherein first difference of

hues, lightnesses or chromas of said target color and a test sample for toning with one light

irradiated is different from second difference of hues, lightnesses or chromas of said target color

and said test sample with another light irradiated, and wherein said system further comprises

means for calculating said blending ratio of colorants which may effectively decrease the

difference between said first difference and said second difference", And in claim 19 ""wherein

first difference of hues, lightness or chroma of said target color and a test sample for toning with

one light irradiated is different from second difference of hues, lightness or chroma of said target

color and said test sample with another light irradiated, and wherein said blending ratio of

colorants is calculated which may effectively decrease the difference between said first

difference and said second difference." Rolleston teaches in (col. 4, lines 9-15) the second look

up table (hues, lightnesses or chromas) may differ from the first look up table due to the creation

method although using the same set of color samples, or the second look up table may differ

from the first look up table due to using a different set of color samples. But Rolleston does not

explicitly specify the chromatic, however, Washio et al. teaches in (col. 2, lines 35-45) a color

image processing apparatus, in which a color or monochromatic document is discriminated by

counting the color code of each pixel respectively in chromatic and achromatic colors in the

document, a color code is generated by changing a color region to be assigned to chromatic color

or achromatic color in accordance with the density gradient of color reading signal, and the

document discrimination is carried out by counting this color code.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to incorporate the teaching of Washio into Rolleston in order to provide a color image

processing apparatus capable of improving the color reproduction of a tonal image having a low

chroma to obtain a better tonal characteristic, and at the same time, improving the resolution of a

character image to reduce color ghost.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 11 and 12 rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

Claims 1, 11 and 12 recite the limitation " color chip and color specification values". There is

insufficient antecedent basis for this limitation in the claim. Applicant should be able to define

the limitations of following parameters "color chip and color specification values" in detail.

Regarding color chip and color specification values: explanation from specification on page 7, line 20: Next, a CCM calculating process performed by executing a CCM calculating program, according to one embodiment of the invention, will be described referring to FIG. 3. And also explanation from specification on page 10, line 2: (input in advance) corresponding to the adjacent Munsell color chips. These explanations do not provide explicit information in order to remove the 35 USC. 112 second paragraph rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Javid A Amini whose telephone number is 703-605-4248. The examiner can normally be reached on 8-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703-306-0377.

                                                    Javid A Amini
                                                    Examiner
                                                    Art Unit 2672

Javid Amini

                                                    JEFFERY BRIER
                                                    PRIMARY EXAMINER